

Claims

- [c1] A wireless communication system, comprising:
at least one base unit and a plurality of handheld response units communicating with said at least one base unit over at least one wireless communication link;
said at least one base unit sending polling signals to said response units over said at least one wireless communication link;
said response units sending response data to said at least one base unit over said at least one wireless communication link in response to one of the polling signals, the response data being entered in the respective response unit by a user; and
said at least one communication link comprising at least one base transceiver at said at least one base unit and a plurality of response transceivers, each at one of said response units, said at least one base transceiver and said response transceivers communicating with a spread-spectrum frequency hopping protocol.
- [c2] The system of claim 1 wherein said at least one base transceiver comprising a plurality of base transceivers at said at least one base unit, said base transceivers being

synchronized in order to send polling signals having a particular temporal relationship with each other.

- [c3] The system of claim 2 wherein said base transceivers transmitting on a common channel.
- [c4] The system of claim 1 wherein said at least one base transceiver comprising a plurality of base transceivers at said at least one base unit, said plurality of base transceivers transmitting on separate channels.
- [c5] The system of claim 4 wherein said at least one base unit comprises a plurality of base units, each of said base transceivers at one of said base units.
- [c6] The system of claim 4 wherein said plurality of base units operate from a common frequency hop table.
- [c7] The system of claim 1 comprising at least one base microcomputer at said at least one base unit and a plurality of response microcomputers, each at one of said response units.
- [c8] The system of claim 7 including a frequency hop table at said at least one base unit.
- [c9] The system of claim 8 wherein said response units communicating with said at least one base transceiver using said protocol without direct access to a said frequency

hop table.

- [c10] The system of claim 9 wherein said protocol comprising a home frequency, wherein a transmission by said at least one base transceiver comprises an initial transmission at said home frequency and said response transceivers attempt to receive said initial transmission at said home frequency.
- [c11] The system of claim 10 wherein said at least one base transceiver transmits a base transmission at the hop frequency, said base transmission transmitting data to said response units.
- [c12] The system of claim 11 wherein said initial transmission at said home frequency transmitting a designation of the hop frequency to said response units.
- [c13] The system of claim 1 wherein said response units sending data to said at least one base unit over said at least one wireless communication link at one or more hop frequencies.
- [c14] The system of claim 1 wherein said protocol comprising a home frequency, wherein a transmission by said at least one base transceiver comprises an initial transmission at said home frequency and a base transmission at a hop frequency, said initial transmission at said home

frequency transmitting a designation of said hop frequency to said response units, said base transmission transmitting data to said response units.

[c15] The system of claim 14 wherein said at least one base transceiver comprising a plurality of base transceivers at said at least one base unit, said base transceivers being synchronized in order to send polling signals having a particular temporal relationship with each other.

[c16] The system of claim 14 wherein said base transceivers transmitting on a common channel.

[c17] The system of claim 14 wherein said plurality of response transceivers transmit at one or more hop frequencies.

[c18] The system of claim 14 wherein one of said plurality of base transceivers transmits said initial transmission and said plurality of base transceivers transmit said base transmission at the hop frequency designated in the initial transmission.

[c19] The system of claim 18 wherein said frequency hopping protocol comprises a particular number of different frequency hops and wherein said initial transmission has a duration that is related to a duration of said base transmission as a function of the number of different fre-

quency hops.

- [c20] The system of claim 14 wherein more than one of said base transceivers transmit said initial transmission and said plurality of base transceivers transmit said base transmission at the hop frequency designated in the initial transmission.
- [c21] The system of claim 20 wherein said frequency hopping protocol comprises a particular number of different frequency hops and wherein said initial transmission has a duration that is related to a duration of said base transmission as a function of the number of different frequency hops.
- [c22] A wireless communication system, comprising:
at least one master unit and a plurality of slave units communicating with said at least one master unit over at least one wireless communication link;
said at least one master unit sending polling signals to said slave units over said at least one wireless communication link;
said slave units sending data to said at least one master unit over said at least one wireless communication link in response to one of the polling signals;
said at least one communication link comprising at least one master transceiver at said at least one base unit and

a plurality of slave transceivers, each at one of said slave units;
said at least one master transceiver and said slave transceivers communicating with a spread-spectrum frequency hopping protocol, said protocol comprising a home frequency, wherein said at least one master transceiver transmits an initial transmission at said home frequency and said slave transceivers attempt to receive said initial transmission at said home frequency.

[c23] The system of claim 22 wherein said at least one base transceiver comprising a plurality of base transceivers at said at least one base unit, said base transceivers being synchronized in order to send polling signals having a particular temporal relationship with each other.

[c24] The system of claim 23 wherein said base transceivers transmitting on a common channel.

[c25] The system of claim 22 wherein said at least one base transceiver comprising a plurality of base transceivers at said at least one base unit, said plurality of base transceivers transmitting on separate channels.

[c26] The system of claim 25 wherein said at least one base unit comprises a plurality of base units, each of said base transceivers at one of said base units.

- [c27] The system of claim 25 wherein each of said base units has a home frequency that is different than the home frequency of other base units.
- [c28] The system of claim 27 wherein said plurality of base units operate from a common frequency hop table.
- [c29] The system of claim 22 wherein said slave units comprise user response units and wherein said response units send response data to said at least one master unit over said at least one wireless communication link in response to one of the polling signals, the response data being entered in the respective response unit by a user.
- [c30] The system of claim 22 wherein said at least one master transceiver transmits a master transmission at the hop frequency, said master transmission transmitting data to said slave units.
- [c31] The system of claim 30 wherein said initial transmission at said home frequency transmitting a designation of the hop frequency to said slave units.
- [c32] The system of claim 22 wherein said slave units sending data to said at least one master unit over said at least one wireless communication link at one or more hop frequencies.

[c33] A wireless communication system, comprising:
at least one master unit and a plurality of slave units
communicating with said at least one master unit over at
least one wireless communication link;
said at least one master unit sending polling signals to
said slave units over said at least one wireless communi-
cation link;
said slave units sending data to said at least one master
unit over said at least one wireless communication link in
response to one of the polling signals;
said at least one communication link comprising at least
one master transceiver at said at least one master unit
and a plurality of slave transceivers, each at one of said
slave units; and
said at least one master transceiver and said slave
transceivers communicating with a spread-spectrum fre-
quency hopping protocol, said protocol comprising a
home frequency, wherein said at least one master
transceiver transmits an initial transmission at said home
frequency and a master transmission at a hop frequency,
said initial transmission at said home frequency trans-
mitting a designation of the hop frequency to said slave
units, said master transmission transmitting data to said
slave units.

- [c34] The system of claim 33 wherein said at least one master transceiver comprising a plurality of master transceivers at said at least one base unit, said master transceivers being synchronized in order to send polling signals having a particular temporal relationship with each other.
- [c35] The system of claim 34 wherein said master transceivers transmitting on a common channel.
- [c36] The system of claim 35 wherein one of said plurality of master transceivers sends said initial transmission designating said hop frequency to said slave units, and wherein said plurality of master transceivers transmit at the hop frequency.
- [c37] The system of claim 36 wherein said plurality of master transceivers alternate sending said initial transmission.
- [c38] The system of claim 36 wherein said frequency hopping protocol comprises a particular number of different frequency hops and wherein said initial transmission has a duration that is related to a duration of said master transmission as a function of the number of different frequency hops.
- [c39] The system of claim 35 wherein each of said plurality of master transceivers sends said initial transmission designating said hop frequency to said slave units and

wherein said plurality of master transceivers transmit at said hop frequency.

[c40] The system of claim 39 wherein said frequency hopping protocol comprises a particular number of different frequency hops and wherein said initial transmission has a duration that is related to a duration of said master transmission as a function of the number of different frequency hops.

[c41] The system of claim 33 wherein said at least one master transceiver comprising a plurality of master transceivers at said at least one base unit, said plurality of master transceivers transmitting on separate channels.

[c42] The system of claim 41 wherein said at least one master unit comprises a plurality of master units, each of said master transceivers at one of said master units.

[c43] The system of claim 33 wherein said slave units comprise user response units and wherein said response units send response data to said at least one master unit over said at least one wireless communication link in response to one of the polling signals, the response data being entered in the respective response unit by a user.

[c44] The system of claim 33 wherein said slave units sending data to said at least one master unit over said at least

one wireless communication link at one or more hop frequencies.